

THE FIRST TEN YEARS

1947-1956

**A REPORT BY  
THE AIRPORT BOARD  
OF BALTIMORE**





## CITY OF BALTIMORE

Thomas D'Alesandro, Jr., Mayor

### Board of Estimates

Leon Abramson, President

Thomas D'Alesandro, Jr., Mayor

R. Walter Graham, Jr., City Comptroller

George A. Carter, Director of Public Works

Thomas N. Biddison, City Solicitor

Allan L. Dell, Clerk

### Aviation Committee of The City Council

Leon A. Rubenstein, Chairman

James J. Duffy, Vice Chairman

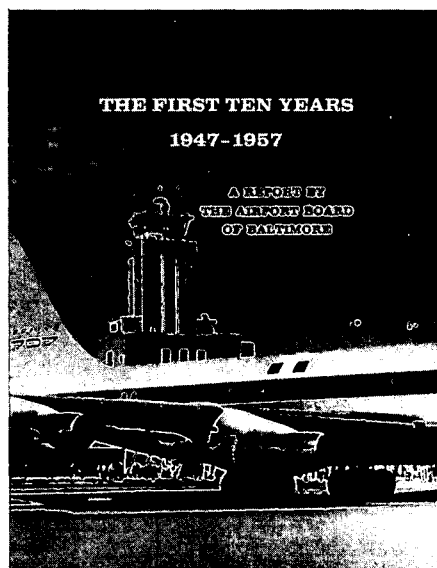
Chester J. Ray

John A. Pica

J. Joseph Curran

Maxwell Alpert

Thomas P. Fallon



THE COVER PHOTOGRAPH shows the Boeing 707—with Friendship's distinctive tower in the background—after it set a new transcontinental record for a transport plane. On March 11, 1957, this jet airliner bettered its own previous record by flying the 2,327 miles from Seattle to Friendship in 3 hours and 48 minutes. Reaching a top speed of 692 m.p.h., the plane averaged 612 m.p.h. for the trip. The 707, prototype of America's first jet airliner, used Friendship for its eastern terminal because Friendship is one of the few civilian airports in the East capable of handling the huge jets.

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AIRPORT BOARD

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JOHN E. SEMMES  
GEORGE A. CARTER  
EX OFFICIO

DEPARTMENT OF AVIATION  
FRIENDSHIP INTERNATIONAL AIRPORT  
MARYLAND

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WILLIAM F. ZORZI  
ASSISTANT TO THE DIRECTOR

PHONE: SOUTHFIELD 1-1227

The Honorable Thomas D'Alesandro, Jr.  
Mayor of the City of Baltimore

Dear Mr. Mayor:

The Airport Board will complete its tenth year of service June 30 of this year.

It seems appropriate, therefore, for the Board, in presenting its report on the past year's operations, also to review what has been accomplished during the over-all period of its stewardship. That is the purpose of the accompanying report.

This report is presented in two parts. The first part tells, in broad outline, of the goal toward which the Board has devoted its main efforts, the progress that has been made, the basic policies that have been followed, and some of the problems that have been involved.

The second part, the Appendix, contains statistical and other data providing more detailed information. As the accounting and operating data on the airports are kept on a calendar year basis, the information presented covers the period from January 1, 1947, through December 31, 1956.

We hope you will find this information both interesting and helpful, and we wish to take this opportunity to express our sincere appreciation of the splendid support and cooperation we have always received from you. We wish also to acknowledge our indebtedness to all the members of our staff, past and present, whose loyal and efficient cooperation has been, in large measure, responsible for the results that have been achieved.

The report presented herewith is respectfully submitted on behalf of the Airport Board.

WALTER F. PERKINS  
Chairman, Airport Board

June 1, 1957

# DEPARTMENT OF AVIATION

## Airport Board \*

Walter F. Perkins, Chairman, 1947-1956, 1956-1962

Robert O. Bonnell, 1947-1954, 1954-1960

John T. Menzies, 1947-1953, 1953-1959

John E. Semmes, 1947-1955, 1955-1961

George A. Carter, *ex officio*, 1955-1959

Paul L. Holland, *ex officio*, 1948-1954

Nathan L. Smith, *ex officio*, 1947

## Director's Office

John O. Colonna, Director

William D. Bridges, Assistant Director

William F. Zorzi, Assistant to the Director

## Former Directors

Donald H. Connolly, 1948-1956

Maj. Gen., USA (Ret.); Administrator of Civ. Aeronautics, 1940-42; commanded Persian Gulf Command, 1942-44; Foreign Liquidation Commissr., Dept. of State, 1946-48.

Cecil R. Moore, 1946-1948

Maj. Gen., USA (Ret.); Ch. Eng., European Theatre of Operations, 1942-46.

Julian L. Schley, 1945-1946

Maj. Gen., USA (Ret.); Gov. Panama Canal, 1932-36; Ch. of Engrs., U. S. Army, 1937-41; Dir. Transportation, Office Co-ordinator, Inter-American Affairs, 1941-45.

\* The first civic body appointed to deal with Baltimore's post-World War II airport problem was the informal Aviation Commission named by Mayor McKeldin in 1943, which in that year began the study of a new airport for Baltimore. Its members were: Robert O. Bonnell, Chairman, Charles M. Bandiere, Charles H. Buck, Harry Cohen, Richard A. Froehlinger, August B. Haneke, Irving H. Kohn, John T. Menzies, W. Watters Pagon, Walter F. Perkins, G. Harry Pouder, William F. Schluderberg, John E. Semmes and Nathan L. Smith. Charles M. Lake was appointed by Anne Arundel County and Francis G. Wrightson was appointed by Baltimore County to sit with the Commission.

On July 2, 1945, in accordance with a recently enacted City ordinance, a formal Baltimore Aviation Commission was appointed by Mayor McKeldin, composed of Messrs. Robert O. Bonnell, Chairman, Harry Cohen, August B. Haneke, John T. Menzies, Walter F. Perkins, William F. Schluderberg and John E. Semmes. Mayor McKeldin and City Engineer Nathan L. Smith were *ex officio* members. This Commission formally selected the Friendship site (which had been first suggested by Charles M. Lake), purchased practically all the land, employed the engineers, adopted the Master Plan and let the first contract for building the runways. It served until July 25, 1947, when, in accordance with the new City Charter adopted November 5, 1946, an Airport Board of five members (four appointive, and the Director of the Department of Public Works serving *ex officio*) was named by Mayor D'Alesandro to replace the Baltimore Aviation Commission.

The new Board consisted of Walter F. Perkins, Chairman, Robert O. Bonnell, John T. Menzies, John E. Semmes and Nathan L. Smith, *ex officio*. All four appointive members had served with the two previous bodies, and are presently serving second terms on the Airport Board under the new City Charter.

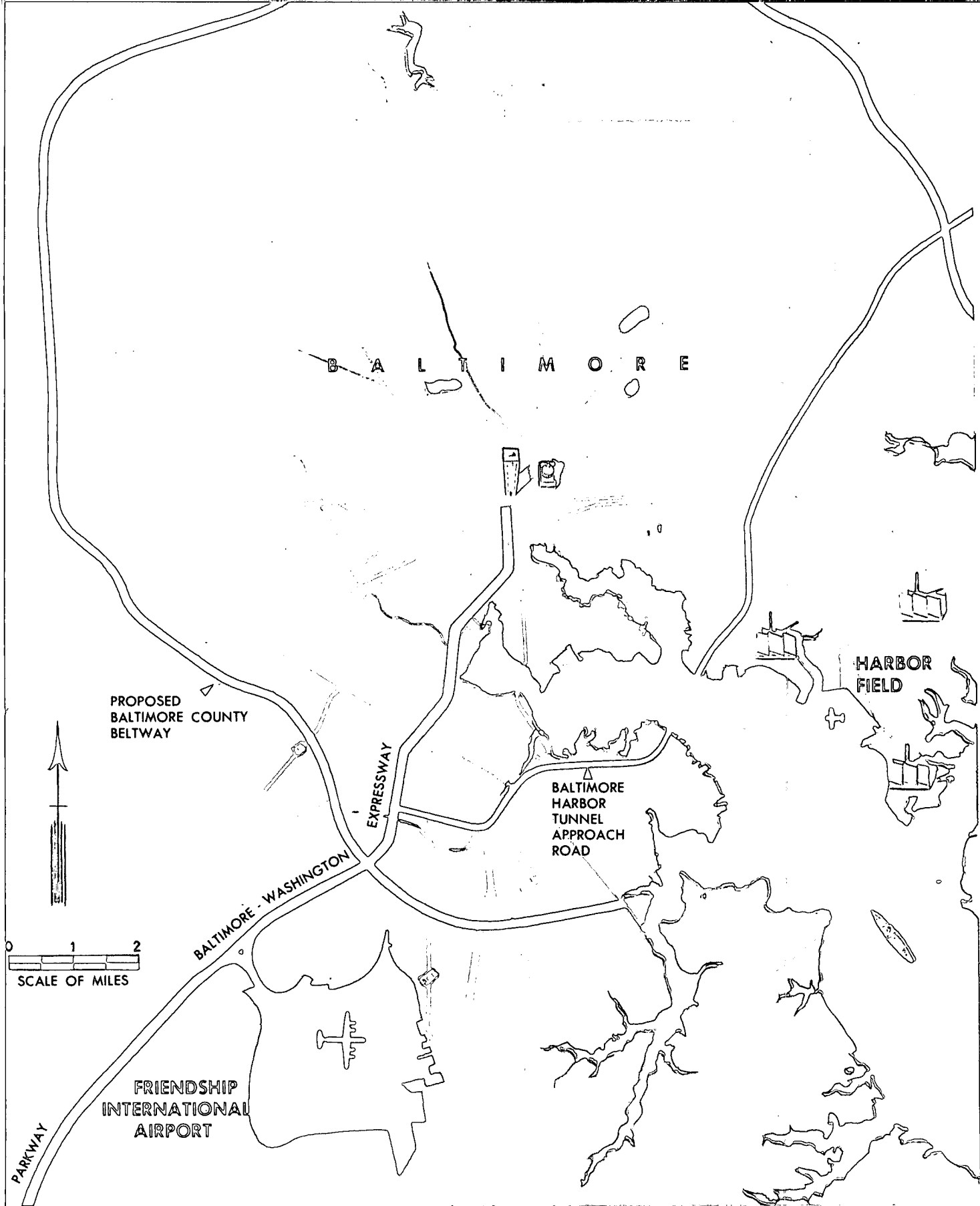
# **THE FIRST TEN YEARS**

## **1947-1956**

**A REPORT TO THE MAYOR OF BALTIMORE**  
**BY THE**  
**AIRPORT BOARD**

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*Friendship International Airport, although farther from the City limits than Harbor Field, is even more convenient to downtown Baltimore—just 20 minutes via Baltimore-Washington Expressway. Map shows how convenient Friendship will be to both the Baltimore County Beltway and the Baltimore Harbor Tunnel approach road when they are completed.*

## THE GOAL

The City Charter under which the Department of Aviation was created, and under which the Airport Board was appointed in 1947, to serve as the head of that Department, defines the duties and responsibilities of the Board as follows:

"a — To approve the site of any airport owned by the City or before the purchase or lease of any property by the City for such purpose . . . ;

"b — To maintain, operate and control all airports owned or leased by the City and to construct and have charge of all facilities thereon;

"c — To develop, maintain, operate and control all airport sites hereafter acquired by the City;

"d — To execute on behalf of the City all contracts for the rental or use of any airport, or any part thereof, however leased or controlled by the City . . . ;

"e — To account for and remit to the Treasurer . . . all receipts from the operation of the Department."

In short, the primary job of the Airport Board, as defined by the Charter, has been to provide and operate airport facilities commensurate with Baltimore's importance and size. This has been the goal to which the Airport Board has devoted its principal efforts.

### As to Airport Facilities

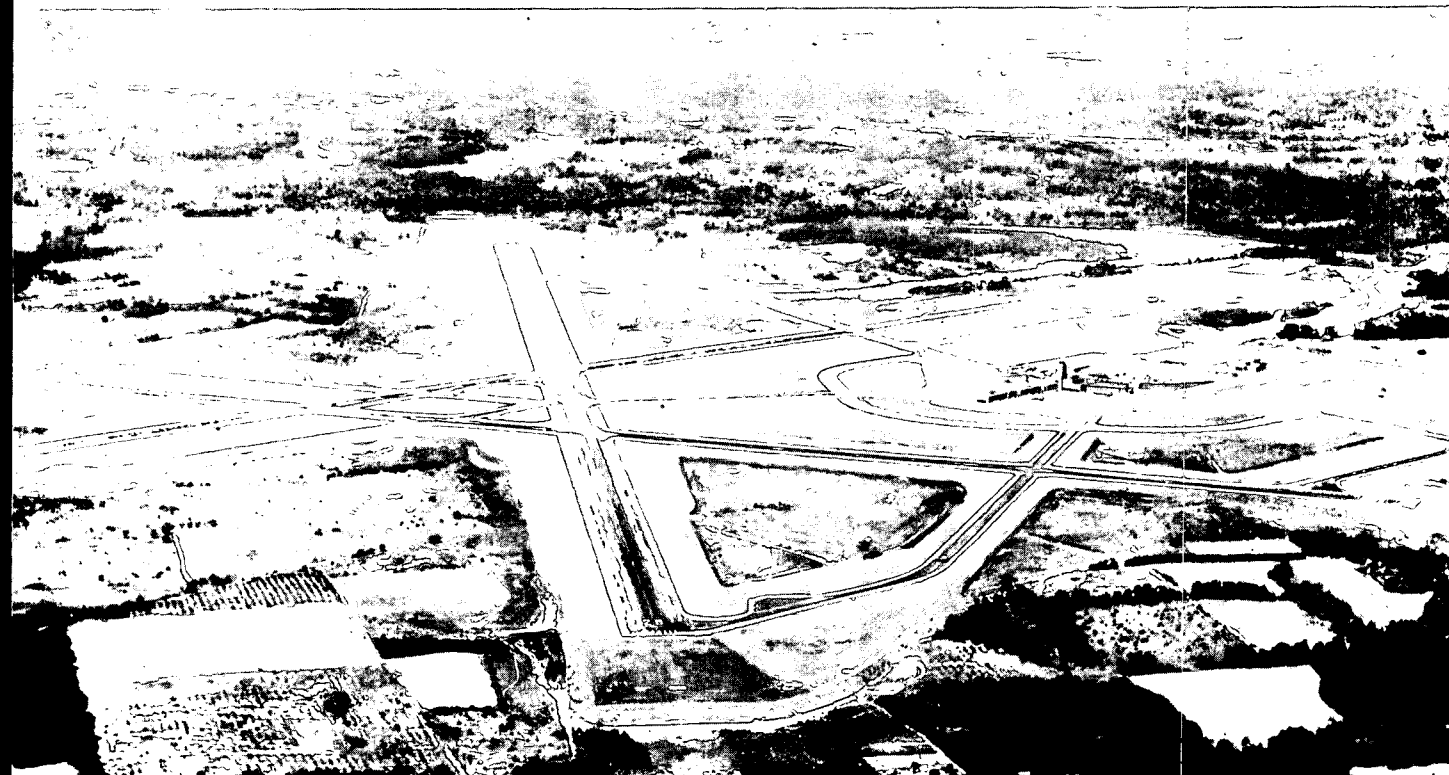
In 1947, Baltimore's only airport was Harbor Field, which, for various reasons of location and construction, was neither satisfactory nor adequate, and which afforded no possibility for the expansion necessary to meet the requirements of ever larger and faster planes.

Today Harbor Field is used as an auxiliary field for private and business planes, and as a base for Maryland Air National Guard units; and Baltimore has, in Friendship (which opened for scheduled service July 23, 1950), one of the best designed and best constructed airports, not only in the United States but in the world. Having been planned and built with the City's possible long-range needs, rather than its immediate needs, in mind, Friendship now provides Baltimore with an airport which can meet, or readily be adapted to meet, any requirements to which the rapidly changing aviation situation may give rise for many years to come.

Friendship is within twenty minutes of downtown Baltimore. It is protected by zoning regulations against the erection of any nearby structures that might interfere with flying operations to or from the field. Its property comprises about 3,200 acres, of which approximately 20 per cent are still available for industrial developments relating to aviation. Its



*Harbor Field—hemmed in by a highly industrialized area and the Patapsco River.*



*Aerial view of Friendship's unexcelled runways. Planning provides for construction of parallel runways, on land already owned by the City, that will more than double present capacity.*

terminal building offers every modern convenience and comfort, and is so designed that it can readily be expanded as need may arise. Its runways can accommodate any planes now in commercial service, or likely to come into service in the discernible future. Actually, its runways today can handle as many arrivals and departures as those of Washington National Airport, and handle them with greater facility, even though such a volume of traffic would overtax the terminal's present capacity for handling passengers. Furthermore, its Master Plan provides for doubling its runway capacity, when needed, by the construction of parallel runways on land already owned.

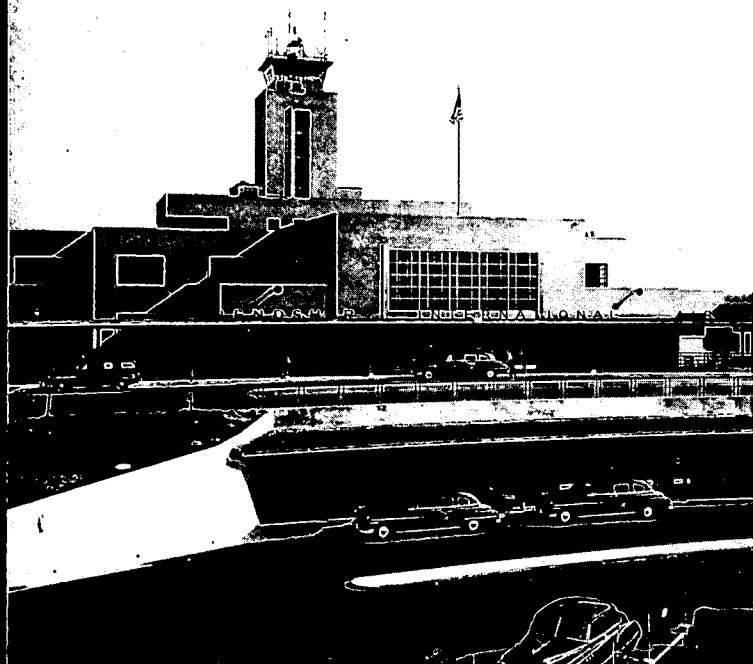
In building Friendship at the time it did and in the way it did, Baltimore obtained the greatest airport bargain that has been obtained by any city in the country. By building at a time when construction costs

were unusually low . . . by selecting a site with topography which required a minimum of grading . . . by using a new and improved type of runway construction which saved at least \$1,500,000 on the cost of runways alone . . . and by employing the best engineering counsel and assistance available . . . Baltimore obtained for about \$15,000,000 an airport which could not be duplicated for less than \$50,000,000 today.

### **As to Airline Service**

Although the best of airport facilities have been provided by the City, the scheduled passenger service provided thus far by the commercial airlines is inadequate for an area of such economic importance. The Airport Board has used, and will continue to use, every means at its command to induce the





*Friendship's passenger terminal is so designed that outgoing passengers arrive on the upper ramp while incoming passengers use the lower level.*

airlines to improve and expand their service. In addition to negotiating directly with the heads of airlines on this matter, the Board—acting in the name of the Mayor and City Council of Baltimore, assisted by the City's legal representatives and in cooperation with the Association of Commerce—has appeared in seventeen service cases before the Civil Aeronautics Board. Because of Friendship's proximity to Washington, however, the airlines have felt they could more profitably serve both the Baltimore and Washington areas from National Airport alone than by using Friendship as well, and consequently have not provided at Friendship services which otherwise would have been provided as a matter of course. We cannot dictate the policies of the airlines, but we shall continue to make every effort to convince them that sufficient air traffic can be generated in the Baltimore area to justify more and better service.

### Proceedings Before the Civil Aeronautics Board

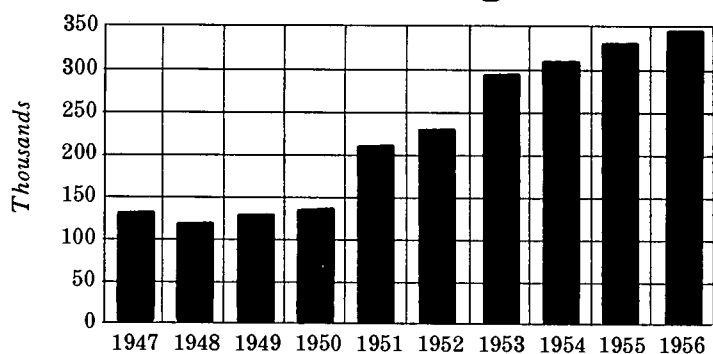
*Cases in which the City and the Association of Commerce have worked together to protect, improve and expand Baltimore's service:*

| Docket No. | Title   | Date    |
|------------|---|---------|
| 674        | <i>The Middle Atlantic Area Case</i>                      | 1946-47 |
| 730        | <i>The Boston-New York-Atlanta-New Orleans Case</i>       | 1946-47 |
| 1705       | <i>Air Freight Rate Case</i>                              | 1946-48 |
| 681        | <i>Air Freight Forwarder Case</i>                         | 1947-48 |
| 810        | <i>Air Freight Case</i>                                   | 1948    |
| 1803       | <i>Pan American Domestic Route Case</i>                   | 1946-48 |
| 2123       | <i>Additional Service to Puerto Rico Case</i>             | 1948    |
| 4786       | <i>National DC-6 Daylight Coach Investigation Case</i>    | 1951    |
| 5124       | <i>New England and Southern Merger Investigation Case</i> | 1952    |
| 5569       | <i>The Eastern-Colonial Merger Case</i>                   | 1952    |
| 3041       | <i>Transatlantic Cargo Case</i>                           | 1950-54 |
| 2355       | <i>Additional Southwest Northeast Service Case</i>        | 1953-55 |
| 4770       | <i>Air Freight Renewal Case</i>                           | 1954-55 |
| 3051       | <i>New York-Florida Proceeding</i>                        | 1954-56 |
| 2396       | <i>Great Lakes-Southeast Service Case</i>                 | 1956-57 |
| 7375       | <i>Service to Puerto Rico Case</i>                        | 1956-57 |
| 8475       | <i>Baltimore Adequacy of Service Investigation</i>        | 1957-   |

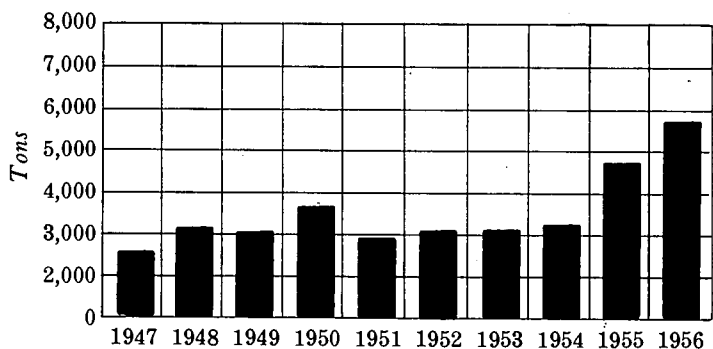


*Air traffic at Friendship is controlled by Civil Aeronautics Administration operators from the top of the nine-story tower above the Terminal Building.*

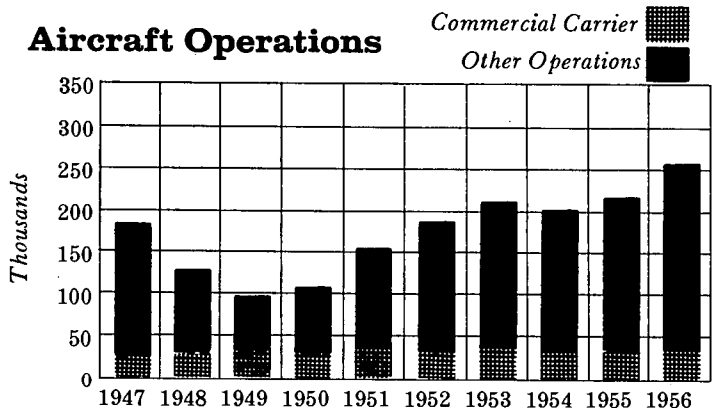
## Revenue Passengers



## Cargo



## Aircraft Operations



### Airlines Serving Baltimore

At the close of 1956, scheduled service was provided from Friendship by Allegheny Airlines, American Airlines, Capital Airlines, Delta Air Lines, Eastern Air Lines, National Airlines, Trans World Airlines, United Air Lines and Slick Airways, an all-cargo carrier.

Also certificated to serve Baltimore are Northeast Airlines, which plans to start passenger service in the fall of 1957, and three all-cargo airlines: Aaxico, Riddle and Seaboard & Western.

There has been some progress with respect to passenger service, however, and considerable progress with respect to cargo traffic and service of other types.

During the period 1947 through 1956, for instance:

The annual number of airline passengers arriving and departing from Baltimore increased from 127,742 to 343,855.

The total air cargo handled increased from 2,688.1 tons to 5,824.6 tons.

The number of commercial airline arrivals and departures increased from 32,620 to 39,945, while, due to the use of larger planes, the daily average number of available passenger seats increased from 1,100 to 2,900.

The average number of passengers per arrival and departure increased from 3.9 to 8.6.

In short, during the decade 1947-1956:

Passenger traffic increased 169 per cent.

Cargo tonnage rose 116 per cent.

Commercial airline arrivals and departures went up 22 per cent.

The daily average number of passenger seats jumped 163 per cent.

And the average number of passengers per arrival and departure more than doubled.

The City is now being served by eight passenger airlines and one all-cargo carrier. As of December 31, 1956, passenger and cargo airlines averaged 120 flights daily to and from Friendship, from where 81 cities could be reached by single plane service.

### As to Business and Other Flying

A substantial increase has been shown in the use of Baltimore airports by private and company-owned planes, so that providing fa-

cilities to enable thousands of businessmen yearly to use their customary mode of travel to and from here has become an important airport function. At present, 55 privately owned business and pleasure planes are based permanently at Friendship, and 93 at Harbor Field. This compares with a total of 41 planes in 1947.

### As to Industrial Development

It is perhaps not generally realized that in addition to providing the facilities for commercial, business and pleasure aviation, Friendship also provides facilities and services on which a number of important industries and Governmental operations located on or adjacent to the airport directly depend. Among those which have located there because of Friendship's facilities are Flight Refueling, Inc., the defense products operations of Westinghouse Electric Corporation, and the Air Research and Development Command, which employ a combined total of

### Air Traffic with Other Communities

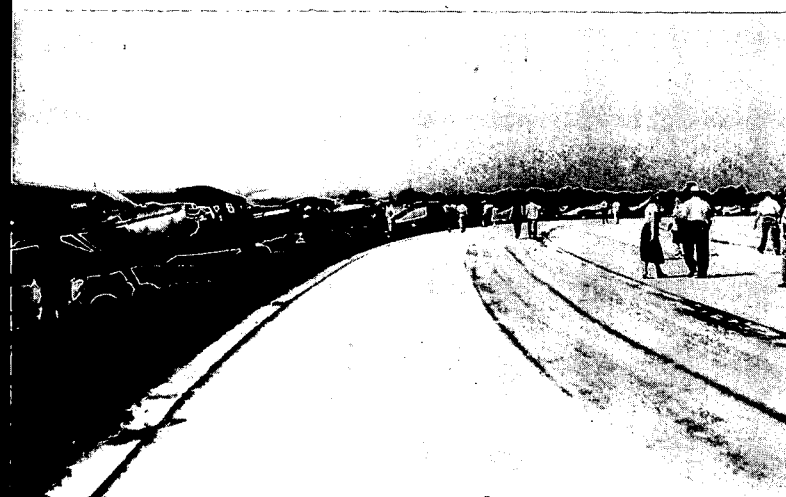
*Sale of airline tickets to and from Baltimore, March 1-14, 1956:*

|                         |       |
|-------------------------|-------|
| New York .....          | 2,329 |
| Miami .....             | 1,144 |
| Pittsburgh .....        | 882   |
| Boston .....            | 782   |
| Chicago .....           | 731   |
| Washington, D. C. ....  | 514   |
| Cleveland .....         | 420   |
| Detroit .....           | 375   |
| Norfolk .....           | 347   |
| Buffalo .....           | 321   |
| Dayton .....            | 257   |
| Louisville .....        | 236   |
| Rochester .....         | 221   |
| Hartford .....          | 212   |
| Columbus .....          | 197   |
| San Francisco .....     | 183   |
| Los Angeles .....       | 178   |
| St. Louis .....         | 173   |
| Atlanta .....           | 147   |
| Richmond .....          | 133   |
| Tampa .....             | 122   |
| Charlotte .....         | 118   |
| Charleston, W. Va. .... | 111   |
| Milwaukee .....         | 108   |
| Providence .....        | 108   |
| Cincinnati .....        | 107   |
| New Orleans .....       | 106   |
| Seattle .....           | 100   |
| All others .....        | 3,128 |

*Source: CAB Airline Revenue Passenger Survey*



*Airport plant of Westinghouse Electric Corporation, located on property adjoining and having taxiway access to Friendship International Airport.*



*At present 55 privately owned business and pleasure planes are permanently based at Friendship.*

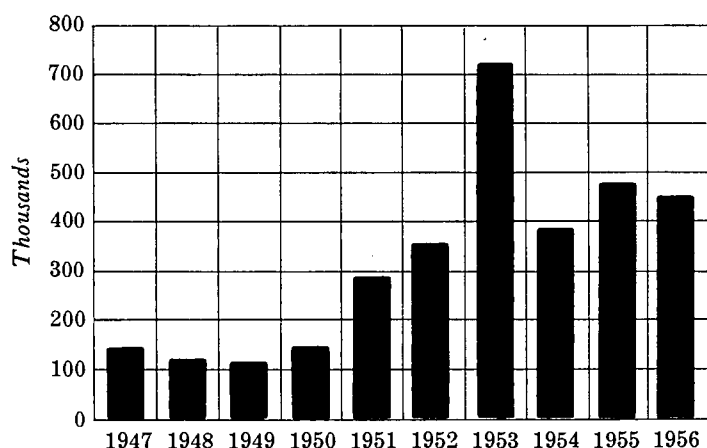
7,450 persons and have a combined yearly payroll of \$48,300,000. Because of the way it was planned, Friendship\* offers opportunities for almost unlimited expansion along such lines.

### **As to Income, Et Cetera**

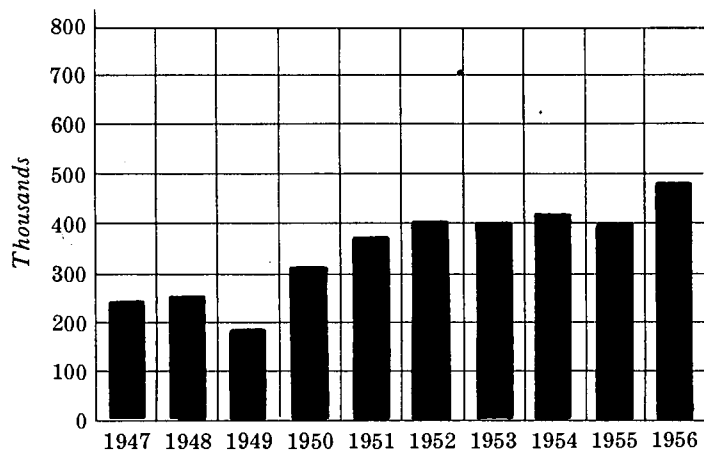
In 1947, the annual operating and maintenance costs for Harbor Field alone were \$241,968. In 1956, in spite of sharply increased labor and material costs, the total operating and maintenance costs for both Harbor Field and Friendship were only \$470,993. Revenue increased from \$135,547 to \$442,227 during this ten-year period. It can be seen, therefore, that during the past decade, total annual operating and maintenance costs for both Friendship and Harbor Field have increased only 95 per cent over the 1947 cost for Harbor Field alone, while revenue has risen 226 per cent.

A total of 37 tenants and concessionaires with whom the Department of Aviation has contracts carry on their operations at the City's airports. These tenants, along with the Department of Aviation, provide employment for more than 825 people, with a yearly payroll of over \$3,700,000.

### **Revenues**



### **Operating and Maintenance Expenses**



### **BASIC POLICY**

With respect to Friendship, as distinct and separate from Harbor Field, the policies of the Airport Board have been based on the following fundamental considerations.

1. Friendship was built as an airport for commercial air service, and its primary purpose is to provide the landing and terminal facilities necessary for such service.

2. The value of Friendship to Baltimore depends basically upon the extent to which the airline services available at Friendship are used by the people of this area.

In the light of these considerations, three facts are obvious:

First, that no permanent military installations, or other activities, detrimental to the development of commercial airline service, should be permitted at Friendship.

Second, that Friendship should be operated for the use primarily of the Baltimore area, but that the use of Friendship by the people of other areas should be encouraged to the extent that it would make possible services which are needed, and could not otherwise be obtained, by the Baltimore area.

Third, that an airline terminal cannot provide either airline service or airline passengers, but can encourage the expansion and use of air service by providing the most convenient, comfortable, attractive and efficient accommodations possible for both passengers and airlines.

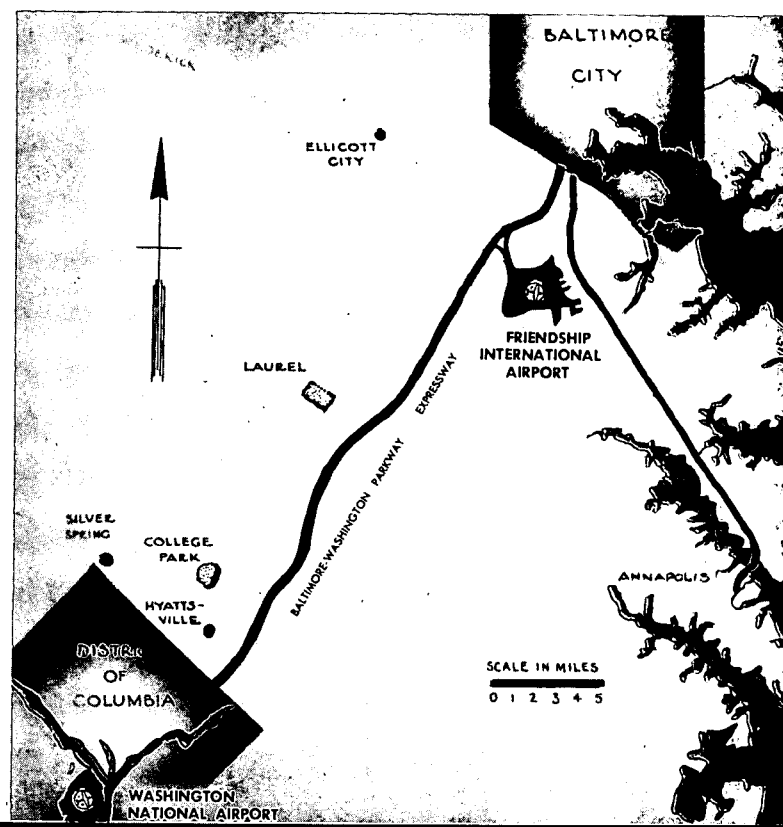
The policies of the Board have been in conformity with the foregoing facts.

With respect to Harbor Field, the Board's policy has been to make the most profitable possible use of its facilities. It is now being used for business, private and instructional flying; as a base for the Maryland Air National Guard; and for industrial and other operations from which revenue is obtained by the City. The Maryland Port Authority has expressed interest in acquiring the Harbor Field property for use as a marine terminal, and this possibility is being given consideration. A more suitable auxiliary airport in the northeastern section of the Baltimore area as a replacement would be a requisite part of such an arrangement.

## PROBLEMS

The most serious problem the Board has faced—other than the problems normally involved in developing, maintaining and operating an enterprise the size of Friendship—has been that of inducing the airlines to provide adequate service. This problem has been complicated by a number of factors. The proximity of Friendship to Washington has been used by the airlines as an excuse for serving both Baltimore and Washington, in so far as possible, from the National Airport, and thus for limiting their services at Friendship. This matter of location is a geographical fact which will always have some effect on the situation. To the extent that it is used as an excuse, however, its effect will diminish as more airline equipment becomes available and as competition grows.

*Friendship's proximity to Washington has been used by the airlines as an excuse for serving Baltimore, as far as possible, from Washington National Airport.*



### Direct Single Plane Service

*At the close of 1956, single plane service was available from Friendship to the following 81 cities:*

|                           |                            |
|---------------------------|----------------------------|
| <i>Allentown</i>          | <i>Kansas City, Mo.</i>    |
| <i>Altoona, Pa.</i>       | <i>Lakeland</i>            |
| <i>Atlanta</i>            | <i>Lancaster, Pa.</i>      |
| <i>Bethlehem</i>          | <i>Louisville</i>          |
| <i>Binghamton</i>         | <i>Marietta, W. Va.</i>    |
| <i>Birmingham</i>         | <i>Massena, N. Y.</i>      |
| <i>Boston</i>             | <i>Meridian, Miss.</i>     |
| <i>Bradenton, Fla.</i>    | <i>Miami</i>               |
| <i>Buffalo</i>            | <i>Montreal</i>            |
| <i>Cedar Rapids</i>       | <i>Monroe, La.</i>         |
| <i>Cincinnati</i>         | <i>Newark</i>              |
| <i>Charleston, W. Va.</i> | <i>New Haven, Conn.</i>    |
| <i>Charlotte</i>          | <i>New York</i>            |
| <i>Chattanooga</i>        | <i>Norfolk</i>             |
| <i>Chicago</i>            | <i>Orlando</i>             |
| <i>Clearwater</i>         | <i>Ottawa</i>              |
| <i>Cleveland</i>          | <i>Parkersburg, W. Va.</i> |
| <i>Columbia</i>           | <i>Philadelphia</i>        |
| <i>Columbus</i>           | <i>Pittsburgh</i>          |
| <i>Cumberland</i>         | <i>Providence, R. I.</i>   |
| <i>Dallas</i>             | <i>Reading</i>             |
| <i>Danville, Va.</i>      | <i>Richmond</i>            |
| <i>Dayton</i>             | <i>Rochester</i>           |
| <i>Daytona Beach</i>      | <i>St. Petersburg</i>      |
| <i>Des Moines</i>         | <i>San Francisco</i>       |
| <i>Detroit</i>            | <i>Sarasota</i>            |
| <i>Durham</i>             | <i>Savannah</i>            |
| <i>Easton, Pa.</i>        | <i>Seattle</i>             |
| <i>Elkins, W. Va.</i>     | <i>Scranton</i>            |
| <i>Elmira, N. Y.</i>      | <i>Shreveport</i>          |
| <i>Fayetteville</i>       | <i>Springfield, Conn.</i>  |
| <i>Florence</i>           | <i>Syracuse</i>            |
| <i>Fort Myers</i>         | <i>Tampa</i>               |
| <i>Greensboro, N. C.</i>  | <i>Toledo</i>              |
| <i>Hagerstown</i>         | <i>Washington</i>          |
| <i>Harrisburg</i>         | <i>Watertown, N. Y.</i>    |
| <i>Hartford, Conn.</i>    | <i>Wilkes-Barre</i>        |
| <i>Indianapolis</i>       | <i>Williamsport, Pa.</i>   |
| <i>Jackson, Miss.</i>     | <i>Wilmington, Del.</i>    |
| <i>Jacksonville</i>       | <i>Winston-Salem</i>       |
| <i>Johnstown</i>          |                            |

Another factor which has increased the difficulty of inducing airlines to provide services commensurate with Baltimore's needs has been an exaggerated impression of the inadequacy of the services which actually have been available at Friendship. There is no question that this impression has discouraged a great many people from even trying to use the existing services. This impression has been created by too much negative publicity and can be corrected by a better understanding of the facts.

### TO SUM UP

It may be helpful, before going into the details contained in the Appendix, to review briefly the salient facts covered thus far. Considering Friendship solely at this time, these facts are as follows:

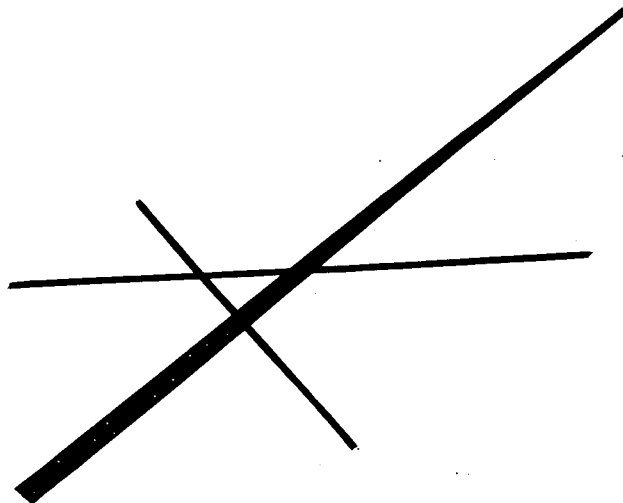
1. The primary purpose for which Friendship was built was to provide Baltimore with a necessary facility for commercial air service, and Friendship has been maintained and operated accordingly.
2. The value of Friendship to this area depends primarily upon the use made of the airlines' services by the people of this area.
3. Friendship's proximity to Washington has been used by the airlines as an excuse for not providing service which they otherwise could not have avoided providing at Friendship.
4. The actual shortcomings of the airline services at Friendship, plus the exaggerated impression of these shortcomings, have been basic factors deterring people from using the available services, and hence in deterring airlines from improving them.

No one today can foresee the shape of things to come in aviation. Reputable scientists tell us there is practically no technical limit to the speed and range airplanes may ultimately attain, and aeronautic engineers say that commercial air travel at supersonic speeds is just around the corner. We cannot know precisely what form the aviation picture will take, or precisely what place Baltimore will occupy in that picture. And we can only guess at the problems awaiting us in the future.

There are a few things, however, of which we can be certain. We can be certain that changes in air travel during the next decade will be tremendous. We can be certain that these changes will create problems of traffic control and airport management vastly more complex than any problems existing at present, and calling for the continuous development of new methods and policies of operation and administration. We can be certain, also, that no matter what direction future developments may take or what shape the aviation picture

may assume, Baltimore has airport facilities which can meet or be adapted to meet the situation.

The past decade has been essentially a period of exploration, experimentation and—to some extent—of groping, in airport management. Air travel has developed into a major form of mass transportation so recently and so rapidly that there has been no backlog of experience to serve as a guide for dealing with many of the problems involved. To avoid making mistakes which might have jeopardized Baltimore's preparedness for the future, therefore, our Board has adhered to policies that may have seemed ultraconservative at times. The Board fully realizes, however, that many of the practices and policies it has followed in the past may have to be modified to meet changing conditions in the future, and the Board is firmly determined that its policies shall be sufficiently flexible to meet any conditions the future may bring.



## APPENDIX

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### Serving Industry

*In addition to supplying Baltimore with facilities for air transportation, Friendship has been a direct factor in the industrial development of the Baltimore Metropolitan Area. Not only the Air Research and Development Command Headquarters, whose air operations are based at Friendship, but also two important industries needing airport services have been attracted by Friendship's facilities and have located on adjoining property with taxiway access to the airport.*

*Flight Refueling, Inc., which produces refueling equipment, moved to Friendship from Connecticut in 1954. The Company's engineering, testing and production facilities are now centralized at Friendship in three modern buildings situated on 28 acres adjacent to the airport. The buildings have a floor space of 68,000 square feet and are designed for substantial expansion as required.*

*Since 1951, Westinghouse Electric Corporation has purchased from the City two plots of land at Friendship totalling slightly more than 116 acres. A modern factory for its Air Arm operation, with more than 600,000 square feet of floor area, was completed in 1951. A new wing which will add another 100,000 square feet of floor space is under way, and will be completed in March, 1957. This operation of Westinghouse, devoted to the new science of avionics, now employs 4,400 persons, with an annual payroll of more than \$25,000,000. In a building adjacent to its Air Arm building, and containing 350,000 square feet of floor area, Westinghouse has set up its Electronics operation. Although this part of the plant was completed only this past November, it is employing approximately 1,800 additional persons, with an annual payroll of well over \$11,000,000. During 1956, these two Westinghouse operations purchased materials and services amounting in value to \$60,000,000, of which \$4,000,000 was spent in the Baltimore Metropolitan Area.*

*The two industries located adjacent to the airport, along with the ARDC and the airport itself, employ 8,100 persons, with an annual payroll of well over \$50,000,000. Measured by the yardstick used by the U. S. Chamber of Commerce, each dollar originally invested in Friendship is now bringing to the Baltimore area more than \$3 of personal income every year.*



## SIGNIFICANT EVENTS

June 24, 1784 . . First recorded flight in U. S. made by Edward Warren, a 13-year-old Baltimore lad, in a balloon owned by Peter Carnes, a Baltimore attorney, from what is now Mt. Vernon Place.

July 23, 1908 . . Lincoln Beachey flies completely over Baltimore City in a dirigible and safely returns.

Oct. 22, 1909 . . Charles F. Elvers flies first Baltimore-built plane.

1910 . . Aero Club of Baltimore formed.

Nov. 6-12, 1910 . . America's second air meet held at Halethorpe.

Nov. 7, 1910 . . Hubert Latham makes first flight over Baltimore by plane.

Nov. 7, 1914 . . Eduard Lollmann, Art Manager of *The Baltimore American*, makes first air photographs of Baltimore.

July, 1919 . . A few veteran aviators of the First World War sponsor 100 acres on the Patapsco (lent by the Dundalk Company, a subsidiary of the Bethlehem Steel Company) as Baltimore's first commercial aviation facility.

Nov. 15, 1919 . . Dundalk Flying Field officially opened.

July 10, 1920 . . Baltimore's first airport (initially known as Dundalk Flying Field) officially dedicated and renamed "Logan Field" in memory of Lt. "Pat" Logan, killed when his plane crashed several days prior to the dedication.

Sept. 1, 1920 . . *The Evening Sun* becomes world's first newspaper to use its own airplane as an aid in news gathering.

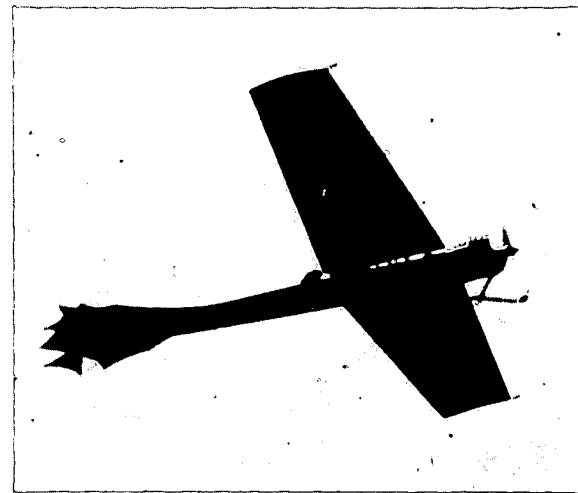
Mar., 1921 . . The 104th Observation Squadron (now the 104th Fighter Interceptor Squadron) of the Maryland National Guard formed.

**BALTIMORE, June 25.**

Yesterday the ingenious PETER CARNES, Esq., made his curious AEROSTATIC EXPERIMENTS, within the Limits of this Town, in the Presence of a numerous and respectable Congress of People, whom the Fame of his superb BALLOON had drawn together from the East, West, North and South, who, generally, appeared highly delighted with the awful Grandeur of so novel a Scene, as a large Globe making repeated Voyages into the airy Regions, which Mr. CARNES's Machine actually performed, in a Manner that reflected Honour on his Character as a Man of Genius, and could not fail to inspire solemn and exalted Ideas in every reflecting Mind.—Ambition, on this Occasion, so fired the youthful Heart of a Lad (only 13 Years old!) of the Name of *Edward Warren* that he bravely embarked as a Volunteer on the last Trip into the Air, and behaved with the ready Fortitude of an old Voyager.—The "gazing Multitude below" wasted to him their loud Applause, the Receipt of which, as he was "soaring aloof," he politely acknowledged by a significant Wave of his Hat.—When he returned to our terrene Element, he met with a Reward, from some of the Spectators, which had a *solid*, instead of an airy, Foundation, and of a *Species* which is ever acceptable to the Residents of this lower World.

**NAVAL OFFICE, BALTIMORE.**  
Inward Entries.—Sloop William, E. Dillingham, from North Carolina. Ship Andrew Jacob, from Virginia.

*From the Maryland Journal & Baltimore Advertiser, Extraordinary. . . . Courtesy of Maryland Historical Society*



*Hubert Latham, a French aviator, making the first plane flight over Baltimore, Nov. 7, 1910. . . . Snapshot owned by Dr. H. R. Stack. Copy courtesy of Maryland Historical Society*

Sept., 1921 . . Logan Field formally opened.

1924 . . Chesapeake Aircraft Company, with one plane, offers "demand" services from Logan Field.



*Terminal Building, Logan Field. . . Photo by the Sunpapers*

### Route Terminology

The CAB, in certifying air carriers to serve specific routes, designates the points to be served as "terminals," "intermediate points," "co-terminals" or "alternate terminals."

The designation, "terminal," establishes the extreme limit of a route and a place where a flight over a route must stop.

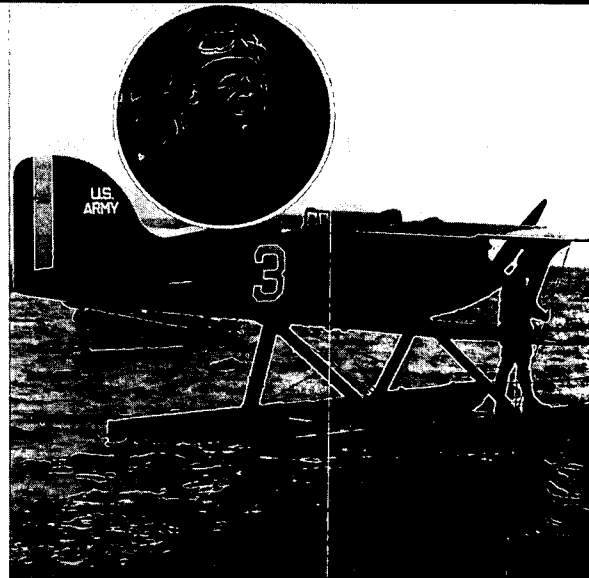
An "intermediate point" is a point to which service is authorized and which is located between the terminal points.

A designation, "co-terminal," or "alternate terminal," is used when more than one city are authorized as terminals on the same route. The difference is that a co-terminal designation permits the carrier to serve any or all the terminals on the same flight, whereas an alternate terminal designation permits the carrier to use any one—but not more than one—terminal on the same flight.

Changes in CAB regulations with respect to nonstop authorization have considerably lessened the significance of the term, "co-terminal," in domestic trunk line route certifications. However, the term continues to be of importance in foreign route certifications.

Normally, the CAB designates the community to be served, and leaves to the carrier the selection of the airport to be used. Because National Airport is not regularly used to serve Baltimore, and Friendship is not regularly used to serve Washington, the fact that a carrier is authorized to serve both Baltimore and Washington as co-terminals for a route does not give it the right to offer service to National Airport as service to Baltimore, or service to Friendship as service to Washington.

However, any carrier certificated to serve Washington and wishing to do so through Friendship need only file with the CAB a notice of intention; and unless the CAB should find that such service might adversely affect the public interest, the service could be inaugurated in thirty days.



*Lt. James Doolittle and his plane at Bay Shore Park after setting new world record Oct. 26, 1925. . . Photo by Baltimore News-Post*

**Oct. 26, 1925** . . Baltimore stages second air meet, and Lt. James Doolittle shatters world record by averaging 232.573 m.p.h. over 350-kilometer triangular course in seaplane race, with Bay Shore Park as headquarters.

**May 3, 1927** . . Baltimore votes approval of loan of \$1,500,000 to build a municipal airport.

**Jan. 21, 1928** . . City, weary of leasing land, announces site for building its own airport across railroad tracks from Logan Field.

**Sept. 27, 1928** . . The Association of Commerce plan for an airport for Baltimore submitted to and accepted by the Mayor and Board of Estimates.

**Mar. 14, 1929** . . Middle River site for Glenn L. Martin Company announced.

**Apr. 23, 1929** . . Board of Estimates approves lease of Logan Field for a period of 5 years as a temporary municipal airport at an annual rental of \$9,000.

**May 6, 1929** . . Regular mail service to and from Baltimore started by Pitcairn Aviation, Inc.

**June 1, 1929** . . In air meet at Logan Field, 30,000 cheer new speed mark of 258 m.p.h.

**Sept. 1, 1929** . . New lighting system for night landings at Logan Field inaugurated.

**Aug. 18, 1930** . . First passenger service started from Logan Field by Eastern Air Transport Company.

**Nov. 4, 1930** . . Voters approve loan of \$2,500,000 to complete airport.

**June 14, 1931** . . Report discloses it has cost the City \$35,400 in the past year to operate Logan Field, while revenues have amounted to \$15,757.

**July 18, 1931** . . Investigation of new Municipal Airport at Dundalk, on which \$3,000,000 has already been spent, discloses evidence indicating project should not be carried through.

**Apr. 16, 1932** . . Municipal Airport put into service for first time when a seaplane ramp (first unit of the airport to be completed) is dedicated by launching of a large U. S. Coast Guard flying boat constructed by General Aviation Corporation at Curtiss-Caproni Building located at airport.

**Aug. 19, 1935** . . Completion of Municipal Airport at Dundalk, started in 1929, is called for in Baltimore's \$32,625,000 Federal work-relief program.

**Apr., 1936** . . City receives \$1,200,000 from PWA to complete Municipal Airport.

**Oct. 6, 1936** . . Dr. Hugo Eckener visits Baltimore and selects a site (not far from Friendship) for a transatlantic Zeppelin operation.

**Feb., 1937** . . American Airlines heavy transport planes overfly Baltimore, allegedly because of muddy condition of Logan Field.

*Passengers on first scheduled service (Eastern Air Transport Company's New York - Richmond flight) to Logan Field, Aug. 18, 1930.*

**July, 1937** . . American Airlines eliminate Baltimore as a night stop on transcontinental flight, due to "bad approach" to Logan Field.

**Nov. 14, 1937** . . Baltimore-Bermuda air service officially begun with arrival of "Bermuda Clipper" from Bermuda.

**Nov. 2, 1938** . . Seaplane terminal facilities at Municipal Airport accepted from contractors by City.

**Nov. 3, 1938** . . Funds exhausted. Work on Municipal Airport curtailed.

**May 2, 1939** . . Baltimore votes approval of loan of \$1,000,000 to complete Municipal Airport.

**May 20, 1939** . . First transatlantic commercial flight from Baltimore.

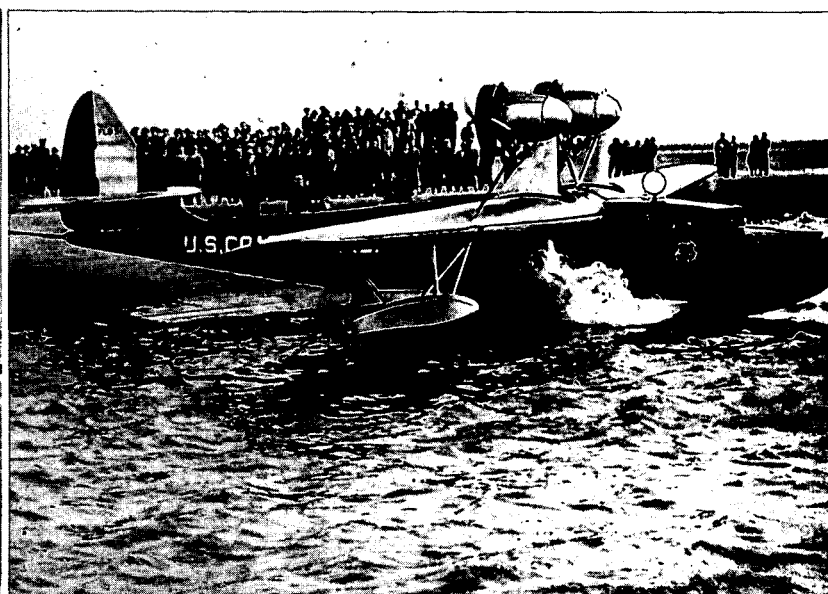
**June 28, 1939** . . "Dixie Clipper" takes off from Municipal Airport on first regular transatlantic flight.

**May 29, 1940** . . Budget Director reports to Mayor that an additional \$500,000 is needed to complete Municipal Airport.

**July 12, 1941** . . WPA grant of \$854,161 for Municipal Airport approved.

**Oct. 20, 1941** . . New Municipal Airport, not yet completed, criticized by airline pilots who consider tall chimneys, trees and high ground potential hazards.

*Launching of Coast Guard flying boat at Municipal Airport, Apr. 16, 1932. Seaplane ramp was first unit of airport to be completed. . . . Photo by Baltimore News-Post*



# OPERATIONS • COMPARATIVE

|   | 1956           | 1955           | 1954           |
|---|----------------|----------------|----------------|
| <b>Passengers:</b>  |                |                |                |
| Incoming .....  | 166,841        | 157,954        | 151,236        |
| Outgoing .....  | 177,014        | 169,647        | 154,306        |
| <b>Total<sup>(d)</sup></b> .....                          | <b>343,855</b> | <b>327,601</b> | <b>305,542</b> |
| <b>Cargo (tons):<sup>(e)</sup></b>                        |                |                |                |
| Incoming .....  | 3,489.1        | 3,090.4        | 2,131.6        |
| Outgoing .....  | 2,335.5        | 1,694.5        | 1,242.2        |
| <b>Total<sup>(f)</sup></b> .....                          | <b>5,824.6</b> | <b>4,784.9</b> | <b>3,373.8</b> |
| <b>Friendship Air Traffic Operations:<sup>(g)</sup></b>   |                |                |                |
| <b>Itinerant:<sup>(h)</sup></b>                           |                |                |                |
| Commercial Carrier <sup>(i)</sup> .....                   | 39,945         | 37,281         | 37,827         |
| Other Civil .....   | 19,529         | 15,698         | 14,140         |
| Military .....  | 28,184         | 23,513         | 20,832         |
| <b>Total Itinerant<sup>(h)</sup></b> .....                | <b>87,658</b>  | <b>76,492</b>  | <b>72,799</b>  |
| <b>Local:<sup>(j)</sup></b>                               |                |                |                |
| Civil <sup>(k)</sup> .....                                | 25,456         | 6,874          | 4,182          |
| Military .....  | 51,051         | 48,914         | 38,465         |
| <b>Total Local<sup>(j)</sup></b> .....                    | <b>76,507</b>  | <b>55,788</b>  | <b>42,647</b>  |
| <b>Total Operations<sup>(l)</sup></b> .....               | <b>164,165</b> | <b>132,280</b> | <b>115,446</b> |
| <b>Harbor Field Air Traffic Operations:<sup>(g)</sup></b> |                |                |                |
| <b>Itinerant:<sup>(h)</sup></b>                           |                |                |                |
| Commercial carrier .....                                  | —              | 393            | 23             |
| Other Civil .....   | 30,586         | 26,611         | 20,430         |
| Military .....  | 16,257         | 18,089         | 17,609         |
| <b>Total Itinerant<sup>(h)</sup></b> .....                | <b>46,843</b>  | <b>45,093</b>  | <b>38,062</b>  |
| <b>Local:<sup>(j)</sup></b>                               |                |                |                |
| Civil .....   | 31,377         | 24,098         | 29,723         |
| Military .....  | 12,326         | 13,633         | 16,924         |
| <b>Total Local<sup>(j)</sup></b> .....                    | <b>43,703</b>  | <b>37,731</b>  | <b>46,647</b>  |
| <b>Total Operations</b> .....                             | <b>90,546</b>  | <b>82,824</b>  | <b>84,709</b>  |
| <b>Total Air Traffic Operations:<sup>(g)</sup></b>        |                |                |                |
| Commercial Carriers .....                                 | 39,945         | 37,674         | 37,850         |
| Other Civil .....   | 106,948        | 73,281         | 68,475         |
| Military .....  | 107,818        | 104,149        | 93,830         |
| <b>Total Operations</b> .....                             | <b>254,711</b> | <b>215,104</b> | <b>200,155</b> |

NOTES: (a) All operations at Harbor Field. (b) Air-line operations transferred from Harbor Field to Friendship 7/23/50. (c) First full calendar year of operation at Friendship. (d) Largest number monthly passengers: incoming—17,687 (Oct., '54); outgoing—16,550 (Aug.,

'56); total—32,899 (Oct., '54). Yearly totals include non-scheduled revenue passengers: '51—7,877; '52—27,783; '53—40,651; '54—29,124; '55—8,436; '56—4,317. (e) Includes air express & air freight. (f) Largest monthly cargo: incoming—418.8 tons (Oct., '56); outgoing—270.4

# TEN - YEAR SUMMARY

| 1953           | 1952           | 1951 <sup>(c)</sup> | 1950 <sup>(b)</sup> | 1949 <sup>(a)</sup> | 1948 <sup>(a)</sup> | 1947 <sup>(a)</sup> |
|----------------|----------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| 123,911        | 103,708        | 99,583              | 63,474              | 63,086              | 66,355              | 63,999              |
| 156,938        | 130,889        | 111,653             | 72,788              | 65,491              | 54,925              | 63,743              |
| <u>280,849</u> | <u>234,597</u> | <u>211,236</u>      | <u>136,262</u>      | <u>128,577</u>      | <u>121,280</u>      | <u>127,742</u>      |
| 2,038.7        | 1,762.1        | 1,718.3             | 2,109.8             | 1,762.1             | 1,853.2             | 1,542.9             |
| 1,332.6        | 1,400.4        | 1,178.6             | 1,598.3             | 1,281.2             | 1,375.6             | 1,145.2             |
| <u>3,371.3</u> | <u>3,162.5</u> | <u>2,896.9</u>      | <u>3,708.1</u>      | <u>3,043.3</u>      | <u>3,228.8</u>      | <u>2,688.1</u>      |
| 40,628         | 38,633         | 39,782              | 17,919              |                     |                     |                     |
| 12,317         | 9,288          | 7,800               | 3,825               |                     |                     |                     |
| 18,570         | 14,440         | 6,227               | 1,606               |                     |                     |                     |
| <u>71,515</u>  | <u>62,361</u>  | <u>53,809</u>       | <u>23,350</u>       |                     |                     |                     |
| 6,388          | 5,825          | 7,162               | 1,878               |                     |                     |                     |
| 43,201         | 30,100         | 8,683               | 372                 |                     |                     |                     |
| <u>49,589</u>  | <u>35,925</u>  | <u>15,845</u>       | <u>2,250</u>        |                     |                     |                     |
| <u>121,104</u> | <u>98,286</u>  | <u>69,654</u>       | <u>25,600</u>       |                     |                     |                     |
| 24             | 14             | 55                  | 19,934              | 38,035              | 34,477              | 32,620              |
| 23,833         | 20,516         | 18,150              | 17,567              | 17,998              | 18,035              | } 20,088            |
| 18,119         | 13,861         | 16,083              | 8,435               | 4,970               | 3,946               |                     |
| <u>41,976</u>  | <u>34,391</u>  | <u>34,288</u>       | <u>45,936</u>       | <u>61,003</u>       | <u>56,458</u>       | <u>52,708</u>       |
| 35,870         | 26,522         | 37,207              | 26,548              | 28,740              | 60,577              | } 116,273           |
| 12,772         | 10,883         | 9,837               | 6,481               | 5,994               | 4,305               |                     |
| <u>48,642</u>  | <u>37,405</u>  | <u>47,044</u>       | <u>33,029</u>       | <u>34,734</u>       | <u>64,882</u>       | <u>116,273</u>      |
| <u>90,618</u>  | <u>71,796</u>  | <u>81,332</u>       | <u>78,965</u>       | <u>95,737</u>       | <u>121,340</u>      | <u>168,981</u>      |
| 40,652         | 38,647         | 39,837              | 37,853              | 38,035              | 34,477              | 32,620              |
| 78,408         | 62,151         | 70,319              | 49,818              | 46,738              | 78,612              | } 136,361           |
| 92,662         | 69,284         | 40,830              | 16,894              | 10,964              | 8,251               |                     |
| <u>211,722</u> | <u>170,082</u> | <u>150,986</u>      | <u>104,565</u>      | <u>95,737</u>       | <u>121,340</u>      | <u>168,981</u>      |

tons (Nov., '56); total-636.9 tons (Oct., '56). (g) Each landing & each takeoff counted as an operation. (h) Operations having either origin or destination beyond local tower. (i) Largest monthly commercial carrier

operations: 3,810 (July, '51). (j) Operations remaining under control of local tower. (k) Includes airline personnel familiarization operations. (l) Largest monthly total operations at Friendship: 16,313 (Aug., '56).



*Entrance to Logan Field, Sept. 16, 1935. Small craft can be seen leaving the field in takeoff into the west, barely clearing high-tension power lines. . . . Photo by Baltimore News-Post*

### **Traffic Control**

*Many improved and additional navigational aids have been made available to Baltimore by the Civil Aeronautics Administration during the ten-year period 1947-1956. Friendship now has the latest electronic aids for guiding and directing aircraft within its control area.*

*The only navigation aid at Harbor Field in 1947 was Low Frequency Radio Range. A pilot was given clearance to land, but that was all. The pilot had to complete navigation, and each approach took a minimum of ten minutes. Landing minima in 1947 were 600-foot ceiling and one-mile visibility.*

*Navigation aids at Friendship at the close of 1956 included an instrument landing system consisting of a localizer, guide path, middle and outer markers, and Hi-intensity approach lights.*

*With an airport surveillance radar (built in Baltimore by Bendix Aviation Corporation), CAA operators can now keep track of planes within a 50-mile radius of the field. The landing minima have been reduced to 200-foot ceiling and one-half mile visibility. The interval between successive approaches is now one minute, with the Radar Controller positioning the aircraft onto final approach.*

*In April, 1957, Radar Departure Control will be in operation. This will allow takeoffs at the rate of one per minute.*

*During the ten-year period, CAA personnel have increased from 7 controllers to 26, and from 1 maintenance man to 10.*

**Nov. 16, 1941 . .** Municipal Airport opened.

**May 23, 1942 . .** War Department takes over Municipal Airport for use during World War II.

**Sept. 30, 1943 . .** Mayor McKeldin appoints commission to study new airport for Baltimore.

**Nov. 23, 1943 . .** Advisory Committee of airline engineers formed.

**Dec. 1, 1943 . .** Army Air Corps takes over Logan Field.

**Nov. 30, 1944 . .** Commission recommends site in vicinity of Friendship Church, Anne Arundel County.

**July 2, 1945 . .** Aviation Commission appointed by Mayor McKeldin, in accordance with City ordinance.

**Aug. 2, 1945 . .** Army announces intention of giving up Municipal Airport, turning it over formally to the City, on Sept. 23.

**Sept. 24, 1945 . .** Maj. Gen. Julian L. Schley, USA (Ret.), former Chief of Engineers, U. S. Army, appointed Executive Director for the Aviation Commission.

**Nov. 15, 1945 . .** Whitman, Requardt-Greiner and Associates approved as consulting engineers to the Aviation Commission.

**Apr. 5, 1946 . .** Chesapeake Airways, Inc., set up for Eastern Shore service.

## Weather

*During the ten-year period 1947-1956, the U. S. Weather Station for Baltimore has made many improvements and changes which offer pilots better and more complete information. Pilots of business and personal planes, as well as those of carriers and the military, are now provided detailed flight forecasts on all kinds of weather within the range of practically all types of aircraft.*

*The teletype and wire photo equipment at Friendship operates continuously, and receives all available information for planning and forecasting for flights at all altitudes, including jet operations at altitudes above 40,000 feet.*

*In the near future, the Weather Bureau plans to install equipment which will accurately measure ceiling and visibility at the approach end of the instrument runway. This will be done through ceilometers and transmissometers, instruments that automatically register ceiling and visibility conditions and relay the information to the Control Tower and Weather Bureau Station.*

**May, 1946** . . Master Plan for new airport submitted by consulting engineers.

**Jan. 1, 1947** . . Maj. Gen. Cecil R. Moore, USA (Ret.), succeeds Maj. Gen. Julian L. Schley, USA (Ret.), as Executive Director.

**Mar. 7, 1947** . . Aviation Commission authorizes preparation of plans and specifications for airport, including terminal building.

**May 1, 1947** . . Work begun on new City airport.

**June 26, 1947** . . General layout for terminal area approved by Civil Aeronautics Administration.

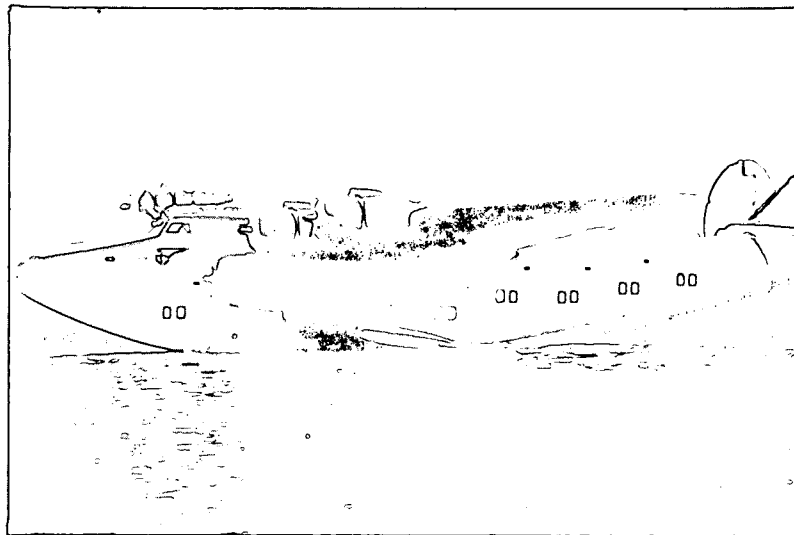
**July 25, 1947** . . Coincident with adoption of new Baltimore City Charter, Department of Aviation takes over duties formerly exercised by Aviation Commission.

**Aug. 12, 1947** . . City's 47 acres at Logan Field sold at public auction to a home development concern.

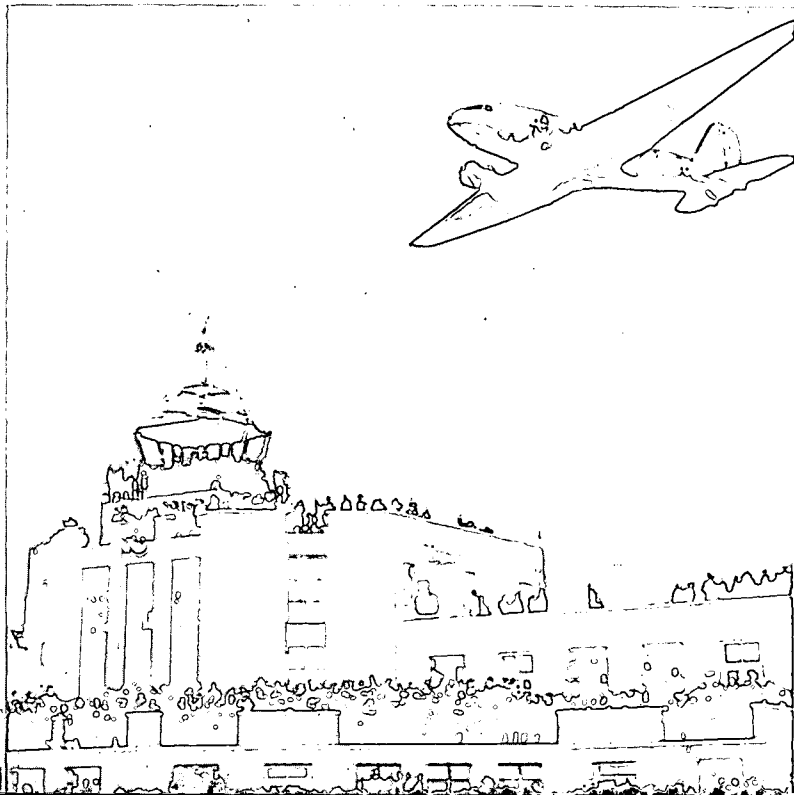
**Dec. 3, 1947** . . The relocated Fort Meade Road completed.

**Feb. 26, 1948** . . Airport officially named "Friendship International Airport."

*Clipper idling on Patapsco before taking off on her first commercial flight to Europe. . . . Photo by Baltimore News-Post*



*American Airlines flagship spells out congratulations to crowd at opening of Municipal Airport, Nov. 16 1941. . . . Photo by Baltimore News-Post*



# COMPARATIVE CONSOLIDATED FINANCIAL

|  | <i>Friendship</i>           |              | <i>Harbor Field</i>         |              |
|--|-----------------------------|--------------|-----------------------------|--------------|
|  | 1956                        | 1955         | 1956                        | 1955         |
| <b>Revenues:</b>   |                             |              |                             |              |
| Flight fees & airport use .....                          | \$ 100,207                  | \$ 89,690    | \$ 2,024                    | \$ 1,197     |
| Building & land rentals .....                            | 170,407                     | 163,068      | 79,985                      | 145,605      |
| Concessions & commissions .....                          | 82,710                      | 70,597       | 6,894                       | 2,184        |
| <i>Total revenues</i> .....                              | \$ 353,324                  | \$ 323,355   | \$ 88,903                   | \$ 149,736   |
| <b>Operating &amp; Maintenance Expenses:</b>             |                             |              |                             |              |
| Administrative .....                                     | \$ 53,335                   | \$ 34,442    | \$ 3,565                    | \$ 4,688     |
| Operating .....  | 272,590                     | 239,590      | 16,529                      | 23,443       |
| Maintenance & repairs .....                              | 100,359                     | 83,732       | 24,615                      | 19,458       |
| <i>Total operating &amp; maintenance expenses</i> .....  | \$ 426,284                  | \$ 357,764   | \$ 44,709                   | \$ 47,589    |
| <i>Operating gain (loss)</i> .....                       | (\$ 72,960)                 | (\$ 34,409)  | \$ 44,194                   | \$ 102,147   |
| <b>Capitalization<sup>(c)</sup> -at Year's End</b> ..... | \$14,751,097 <sup>(b)</sup> | \$14,747,305 | \$ 8,542,766 <sup>(b)</sup> | \$ 8,534,765 |
| <b>Bonds Outstanding -at Year's End</b> ..               | \$ 7,600,000 <sup>(d)</sup> | \$ 8,400,000 | \$ 1,476,000 <sup>(d)</sup> | \$ 1,591,000 |
| <b>Debt Service:</b>                                     |                             |              |                             |              |
| Bond interest .....                                      | \$ 120,000                  | \$ 130,500   | \$ 46,090                   | \$ 50,650    |
| Bond redemption payments .....                           | 800,000                     | 800,000      | 115,000                     | 114,000      |
| <i>Total debt service</i> .....                          | \$ 920,000                  | \$ 930,500   | \$ 161,090                  | \$ 164,650   |



# STATEMENT

| <i>Friendship &amp;<br/>Harbor Field<br/>1956</i> | <i>Harbor Field<br/>1947</i>    |
|---|---------------------------------|
| \$ 102,231  | \$ 51,178                       |
| 250,392   | 72,776                          |
| 89,604  | 11,593                          |
| <u>\$ 442,227</u>                                 | <u>\$ 135,547<sup>(a)</sup></u> |
| \$ 56,900   | —                               |
| 289,119   | \$ 127,567                      |
| 124,974   | 114,401                         |
| <u>\$ 470,993</u>                                 | <u>\$ 241,968</u>               |
| (\$ 28,766)                                       | (\$ 106,421)                    |
| \$23,293,863 <sup>(b)</sup>                       | \$ 8,172,272                    |
| \$ 9,076,000                                      | \$ 3,203,000                    |
| \$ 166,090  | \$ 115,130                      |
| 915,000   | 214,000                         |
| <u>\$ 1,081,090</u>                               | <u>\$ 239,130</u>               |

## Notes Pertaining to Financial Statement

(a) Revenues for 1947 include \$11,600 from factory rentals for prior years, and \$39,300 from the sale of gasoline and oil. The Department discontinued the sale of gasoline and oil in 1948, when it rented Hangar No. 1 as a unit.

(b) Capital investment as of December 31, 1956, consists of the following City and Federal funds:

|                          | <i>Friendship</i>   | <i>Harbor Field</i> | <i>Total</i>        |
|--------------------------|---------------------|---------------------|---------------------|
| PWA, Federal . . . . .   | —                   | \$1,542,000         | \$ 1,542,000        |
| WPA, Federal . . . . .   | —                   | 1,625,580           | 1,625,580           |
| CAA, Federal . . . . .   | \$ 2,632,590        | 100,290             | 2,732,590           |
| Baltimore City . . . . . | 12,118,507          | 5,274,896           | 17,393,693          |
|                          | <u>\$14,751,097</u> | <u>\$8,542,766</u>  | <u>\$23,293,863</u> |

(c) Capital investment is the amount determined by the Department of the Comptroller as representing the original cost of the physical facilities.

(d) Bonds outstanding as of December 31, 1956:

|                                       | <i>Friendship</i>  | <i>Harbor Field</i> |
|---------------------------------------|--------------------|---------------------|
| 1st airport serial, 1933-67 . . . . . | —                  | \$ 468,000          |
| 2nd airport serial, 1936-70 . . . . . | —                  | 1,008,000           |
| 4th airport serial, 1950-59 . . . . . | \$ 900,000         | —                   |
| 5th airport serial, 1952-61 . . . . . | 1,500,000          | —                   |
| 6th airport serial, 1953-67 . . . . . | 5,200,000          | —                   |
|                                       | <u>\$7,600,000</u> | <u>\$1,476,000</u>  |

City accounts are kept on a cash basis. Revenue is shown in the year received, regardless of when accrued, and expenses are reflected in the year paid rather than when incurred.

# FINANCIAL • COMPARATIVE

|   | 1956                | 1955                | 1954                |
|---|---------------------|---------------------|---------------------|
| <b>Revenues:</b>                            |                     |                     |                     |
| Friendship .....                            | \$ 353,324          | \$ 323,355          | \$ 316,309          |
| Harbor Field .....                          | 88,903              | 149,736             | 73,879              |
| <i>Total for Department</i> .....           | <u>442,227</u>      | <u>473,091</u>      | <u>390,188</u>      |
| <b>Operating &amp; Maintenance Expense:</b> |                     |                     |                     |
| Friendship .....                            | 426,284             | 357,764             | 382,679             |
| Harbor Field .....                          | 44,709              | 47,589              | 43,761              |
| <i>Total for Department</i> .....           | <u>470,993</u>      | <u>405,353</u>      | <u>426,440</u>      |
| <b>Operating Gain (Loss):</b>               |                     |                     |                     |
| Friendship .....                            | (72,960)            | (34,409)            | (66,370)            |
| Harbor Field .....                          | 44,194              | 102,147             | 40,118              |
| <i>Total for Department</i> .....           | <u>(28,766)</u>     | <u>67,738</u>       | <u>(26,252)</u>     |
| <b>Capital Investment-at Year's End</b>     |                     |                     |                     |
| Friendship .....                            | 14,751,097          | 14,747,305          | 14,748,665          |
| Harbor Field .....                          | 8,542,766           | 8,534,765           | 8,534,765           |
| <i>Total for Department</i> .....           | <u>23,293,863</u>   | <u>23,282,070</u>   | <u>23,283,430</u>   |
| <b>Bonds Outstanding-at Year's End</b>      |                     |                     |                     |
| Friendship .....                            | 7,600,000           | 8,400,000           | 9,200,000           |
| Harbor Field .....                          | 1,476,000           | 1,591,000           | 1,705,000           |
| <i>Total for Department</i> .....           | <u>9,076,000</u>    | <u>9,991,000</u>    | <u>10,905,000</u>   |
| <b>Debt Service:</b>                        |                     |                     |                     |
| Interest:                                   |                     |                     |                     |
| Friendship .....                            | 120,000             | 130,500             | 141,000             |
| Harbor Field .....                          | 46,090              | 50,650              | 58,710              |
| <i>Total for Department</i> .....           | <u>166,090</u>      | <u>181,150</u>      | <u>199,710</u>      |
| Bond Redemption Payments:                   |                     |                     |                     |
| Friendship .....                            | 800,000             | 800,000             | 800,000             |
| Harbor Field .....                          | 115,000             | 114,000             | 214,000             |
| <i>Total for Department</i> .....           | <u>915,000</u>      | <u>914,000</u>      | <u>1,014,000</u>    |
| Total Debt Service:                         |                     |                     |                     |
| Friendship .....                            | 920,000             | 930,500             | 941,000             |
| Harbor Field .....                          | 161,090             | 164,650             | 272,710             |
| <i>Total for Department</i> .....           | <u>\$ 1,081,090</u> | <u>\$ 1,095,150</u> | <u>\$ 1,213,710</u> |

NOTES: (a) Revenue for 1947 includes \$11,600 from factory rentals for prior years, as well as sales of gasoline and oil amounting to \$10,400 more than in 1948, and \$30,000 more than in 1949. Gasoline and oil were sold by the Department when it operated Hangar No. 1. In 1948, the Department rented Hangar No. 1 as a unit. (b) Operating expenses in 1949 were reduced when the

Department discontinued operating Hangar No. 1 and rented it as a unit.

(c) Airline operations transferred from Harbor Field to Friendship July 23, 1950.

(d) Harbor Field revenue for 1953 distorted by receipt of \$386,000 in a lump sum settlement of factory rent due for a number of prior years.

# TEN - YEAR SUMMARY

| 1953   | 1952   | 1951   | 1950 <sup>(c)</sup>                          | 1949   | 1948                                       | 1947                                       |
|--|--|--|--|--|--|--|
| \$ 305,730<br>419,961 <sup>(d)</sup><br><u>725,691</u> | \$ 286,513<br>69,305<br><u>355,818</u>       | \$ 217,031<br>66,432<br><u>283,463</u>       | \$ 64,182<br>75,033<br><u>139,215</u>        | \$ 111,899<br><u>111,899</u>                 | \$ 112,039<br><u>112,039</u>               | \$ 135,547<br><u>135,547<sup>(a)</sup></u> |
| 339,782<br>60,919<br><u>400,701</u>                    | 346,408<br>58,296<br><u>404,704</u>          | 312,043<br>65,933<br><u>377,976</u>          | 231,860<br>91,635<br><u>323,495</u>          | 186,393<br><u>186,393<sup>(b)</sup></u>      | 245,793<br><u>245,793</u>                  | 241,968<br><u>241,968</u>                  |
| (34,052)<br>359,042<br><u>324,990</u>                  | (59,895)<br>11,009<br><u>(48,886)</u>        | (95,012)<br>499<br><u>(94,513)</u>           | (167,678)<br>(16,602)<br><u>(184,280)</u>    | (74,493)<br><u>(74,493)</u>                  | (133,755)<br><u>(133,755)</u>              | (106,421)<br><u>(106,421)</u>              |
| 14,564,421<br>8,532,926<br><u>23,097,347</u>           | 14,341,752<br>8,532,329<br><u>22,874,081</u> | 14,316,562<br>8,529,772<br><u>22,846,334</u> | 8,525,552<br><u>8,525,552</u>                | 8,529,044<br><u>8,529,044</u>                | 8,527,321<br><u>8,527,321</u>              | 8,172,272<br><u>8,172,272</u>              |
| 10,000,000<br>1,919,000<br><u>11,919,000</u>           | 10,800,000<br>2,133,000<br><u>12,933,000</u> | 11,400,000<br>2,347,000<br><u>13,747,000</u> | 11,700,000<br>2,561,000<br><u>14,261,000</u> | 12,000,000<br>2,775,000<br><u>14,775,000</u> | 6,000,000<br>2,989,000<br><u>8,989,000</u> | 3,000,000<br>3,203,000<br><u>6,203,000</u> |
| 151,500<br>66,770<br><u>218,270</u>                    | 159,000<br>74,830<br><u>233,830</u>          | 162,000<br>82,890<br><u>244,890</u>          | 165,000<br>90,950<br><u>255,950</u>          | 165,000<br>99,010<br><u>264,010</u>          | 75,000<br>107,070<br><u>182,070</u>        | 30,000<br>115,130<br><u>145,130</u>        |
| 800,000<br>214,000<br><u>1,014,000</u>                 | 600,000<br>214,000<br><u>814,000</u>         | 300,000<br>214,000<br><u>514,000</u>         | 300,000<br>214,000<br><u>514,000</u>         | 214,000<br><u>214,000</u>                    | 214,000<br><u>214,000</u>                  | 214,000<br><u>214,000</u>                  |
| 951,500<br>280,770<br><u>\$ 1,232,270</u>              | 759,000<br>288,830<br><u>\$ 1,047,830</u>    | 462,000<br>296,890<br><u>\$ 758,890</u>      | 465,000<br>304,950<br><u>\$ 769,950</u>      | 165,000<br>313,010<br><u>\$ 478,010</u>      | 75,000<br>321,070<br><u>\$ 396,070</u>     | 30,000<br>329,130<br><u>\$ 359,130</u>     |

(e) Capital investment is the amount determined by the Department of the Comptroller as representing the original cost of the physical facilities.

During the past 7 years, 1950-1956, operating results for the Department have fluctuated between a net income of \$324,990 in 1953 and a deficit of \$184,280 in 1950,

with the result for the 7-year period showing a net income of \$10,031.

City accounts are kept on a cash basis. Revenue is shown in the year received, regardless of when accrued, and expenses are reflected in the year paid rather than when incurred.

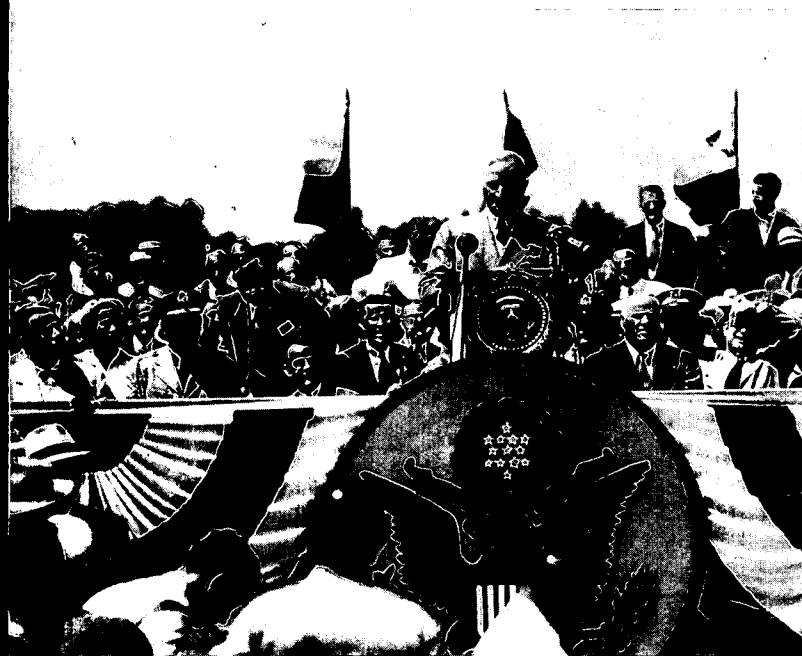
## Improvements and Additions

Since Friendship was dedicated on June 24, 1950, a sizable construction program has been carried forward. In 1952, the first hangar, costing \$189,500, was completed. This 38,000 - square foot prefabricated structure provided the first housing for aircraft at Friendship and the space for the first aircraft service station. A lean-to of approximately 4,040 square feet was added to this hangar in 1955, and another lean-to of 5,300 square feet was added in 1956.

To provide additional parking space, 15,800 square yards of hard surface paving were added to the east parking apron during 1956, at a cost of \$97,219.

To take care of the demand for additional hangar space, ground was broken for Hangar No. 2 on May 21, 1956. The new hangar will contain 60,000 square feet and have a lean-to with an additional 7,500 square feet. Completion is now scheduled for the early part of June, 1957. The cost of the hangar and lean-to will be about \$688,000.

Scheduled for completion during February, 1957, is a taxi guidance sign system costing \$51,862, which the CAA recommends as standard for all airports. The system consists of 80 electrically lighted directional signs for directing pilots to parking locations and takeoff positions. Friendship is among the first to install this CAA-approved system.



President Harry S. Truman addressing throng at Friendship International Airport dedication, June 24, 1950.

Apr. 1, 1948 . . Maj. Gen. Donald H. Connolly, USA (Ret.), succeeds Maj. Gen. Cecil R. Moore, USA (Ret.), as Director of Baltimore City Department of Aviation.

Nov. 22, 1948 . . Department of Aviation decides to lengthen east-west runway from 8,000 feet to 9,450 feet.

Feb. 17, 1950 . . Municipal Airport name changed to "Harbor Field."

May 22, 1950 . . Terminal and Service Buildings substantially completed and conditionally accepted.

June 24, 1950 . . Friendship International Airport formally dedicated by President Harry S. Truman.

July 23, 1950 . . Scheduled airline service starts at Friendship.

Dec. 15, 1950 . . Last of the nine contracts for building Friendship completed.

Mar. 31, 1951 . . Air Force announces it is moving its Air Research and Development Command Headquarters to Baltimore from Dayton, Ohio.

Aug. 29, 1951 . . Contract for building first hangar awarded.

Oct. 22, 1954 . . Baltimore-Washington Parkway opened.

Apr. 1, 1955 . . Trans World Airlines begin Constellation service to San Francisco.

May 25, 1955 . . Curtiss-Caproni Building at Harbor Field sold to Bendix Aviation Corporation.

July 8, 1955 . . Maryland Air National Guard jets given base at Glenn L. Martin airport.

July 20, 1955 . . Air Guard allowed to base 12 jet planes temporarily at Friendship.

Oct., 1955 . . Port of Baltimore Commission undertakes study of use of Harbor Field.

Oct. 25, 1955 . . Eastern Air Lines announce non-stop, four-engine, Baltimore to Miami flight.

Nov. 23, 1955 . . CAB certificates Delta Air Lines to serve Baltimore.

Feb. 1, 1956 . . Contract for a second hangar with lean-to shop and an additional lean-to for Hangar No. 1 awarded.

Apr. 1, 1956 . . Delta Air Lines inaugurate flights through Baltimore.

**Apr. 29, 1956** . . United Air Lines start DC-7 service to West Coast.

**May, 1956** . . Contract for foundations, utilities and other work for Hangar No. 2 and lean-to for Hangar No. 1 awarded.

**May, 1956** . . Friendship's fixed base operator, Pan-Maryland Airways, Inc., receives CAA's "Approved Repair Station" license.

**May 1, 1956** . . Slick Airways, an all-cargo carrier, moves operations from Washington to Baltimore.

**June 13, 1956** . . Contract for CAA-approved taxi guidance sign system and contract for extension to east area parking apron awarded.

**Aug. 27, 1956** . . Airport Board names John O. Colonna to succeed Maj. Gen. Donald H. Connolly, USA (Ret.), as head of the Department of Aviation on General Connolly's retirement, December 31, 1956.

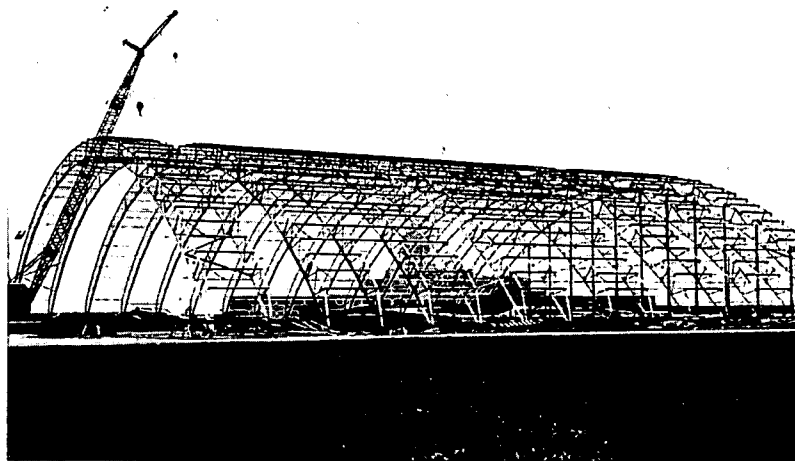
**Oct., 1956** . . Capital Airlines begin using Viscounts on Chicago, Pittsburgh and Norfolk flights.

**Nov. 21, 1956** . . Airport Board extends for 6 months Maryland Air National Guard's temporary permission to base jets at Friendship.

**Nov. 25, 1956** . . Two B-52 jet bombers land at Friendship after 16,000-mile record flight.

**Nov. 26, 1956** . . Airport Board approves proposal to lease Hangar No. 2 (under construction) to Pan-Maryland Airways, Inc.

**Dec. 14, 1956** . . National Airlines begin Baltimore to Miami nonstop service.



*Hangar No. 1, nearing completion, Jan. 19, 1952. . . . Courtesy of Balto. Assn. of Commerce*

### Airport Zoning

*Zoning regulations have been provided to maintain construction below 280 feet m.s.l. in a more than 32-square-mile area surrounding the airport. This permits a 50-1 glide angle approach to any of the present or future runways. It also provides complete clearance in turning areas.*

*A resolution adopted by the County Commissioners of Anne Arundel County on January 30, 1945, and an ordinance adopted by the Mayor and City Council of Baltimore on December 15, 1944, created an Airport Zoning Board and a Board of Airport Zoning Appeals. Members of the Zoning Board are: John E. Semmes, Chairman, Emory Cromwell, August B. Haneke, Charles M. Lake and Walter F. Perkins. Members of the Board of Zoning Appeals are: George Downs, Chairman, James Gillice, Walter V. Harrison, Max L. Weiner and James F. Whitescarver. The Secretary serving both Boards is James W. Blackhurst.*

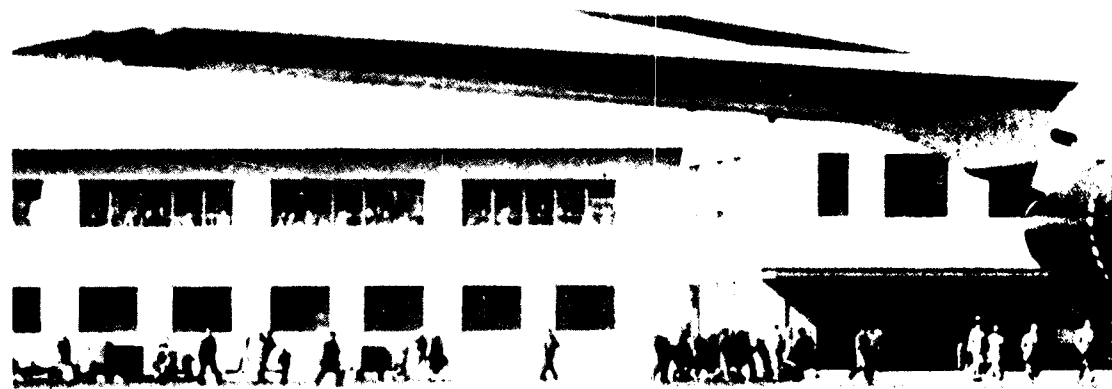
*B-52 taxiing into position at Friendship International Airport Nov. 25, 1956, after setting jet bomber record for staying aloft. . . . Photo by the Sunpapers*



## FRIENDSHIP FACTS

|   |  |
|---|--|
| <b>Owned by:</b>                              | The City of Baltimore.   |
| <b>Operated by:</b>                           | The City's Department of Aviation.   |
| <b>Location:</b>                              | On a plateau 146 feet above sea level, in the northeastern section of Anne Arundel County, midway between Baltimore and Annapolis. Immediately adjacent to the Baltimore-Washington Expressway; 10 miles from City Hall (downtown Baltimore).  |
| <b>Size:</b>                                  | Approximately 3,200 acres.   |
| <b>Started:</b>                               | Site recommended November 30, 1944. Master Plan submitted May, 1946. Grading begun May 1, 1947.  |
| <b>Opened:</b>                                | Dedicated June 24, 1950. Opened for scheduled service July 23, 1950.   |
| <b>Original cost:</b>                         | Approximately \$15,000,000. As of December 31, 1956, an additional \$966,000 had been spent or committed for capital improvements.   |
| <b>Runways:</b>                               | There are 3 runways, having a total length of 4.14 miles, put down over "super-compacted" soil and surfaced with asphaltic macadam to withstand the impact of planes up to 450,000 pounds. The instrument-east-west-runway (10-28) is the longest, 9,450 feet, and 200 feet wide. Northwest-southeast runway (15-33) is 6,450 by 150 feet. Northeast-southwest runway (4-22) is 6,000 by 150 feet. There are 4.28 miles of taxiways, 75 feet wide. Contractor for runways: C. J. Langenfelder & Son, Inc., of Baltimore.   |
| <b>Present structures:</b>                    | Terminal Building, Service Building, automobile service station, Hangar No. 1 with 2 lean-tos, and Hangar No. 2 with lean-to.  |
| <b>Construction planned:</b>                  | Cargo addition to Terminal Building.   |
| <b>Terminal Building features:</b>            | Its 3 piers form a T by coming together at the main terminal. Building, air conditioned throughout, is designed to eliminate cross-traffic of incoming and outgoing passengers. In 3 levels. The first, the service level, includes baggage handling and airline operations. The second—passenger departure level—includes ticket area and departing gates. Third level contains a public observation deck, banquet facilities and office space. Consumer concessions, Post Office, etc., are on second level, in addition to roomettes. Nine-story Control Tower, operated by CAA, is 278 feet above sea level and gives Friendship its distinctive profile. Domestic and international passenger traffic entirely separate, though still handled in a single building. Building constructed by Consolidated Engineering Company, Inc., of Baltimore, at a cost of \$3,230,400. |
| <b>Aircraft positions:</b>                    | At present there are 12 aircraft gate positions at the Terminal Building. These can be expanded to 34.   |
| <b>Aircraft operations, present capacity:</b> | 40 per hour.   |
| <b>Parking area capacity:</b>                 | 1,400 automobiles.   |
| <b>Tenants:</b>                               | Airline Limousine, Inc.; Maryland Air National Guard; Air Research and Development Command; Al Green Enterprises of Maryland, Inc.; Allegheny Airlines, Inc.; American Airlines; Capital Airlines; Civil Air Patrol; Delta Air Lines, Inc.; Eastern Air Lines; Emery Air Freight; Fidelity-Baltimore National Bank & Trust Company; Gulf Service Station; Hertz Stations, Inc.; National Airlines; Pan-Maryland Airways, Inc.; Slick Airways, Inc.; Trans World Airlines; United Air Lines; Civil Aeronautics Administration; U. S. Weather Bureau; Westinghouse Electric Corporation.   |
| <b>Consulting engineers:</b>                  | Whitman, Requardt-Greiner Company and Associates, of Baltimore.  |





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